AIR CLEANERS FOR REMOVAL OF ODOROUS COMPOUNDS ASSOCIATED WITH THE ALISO CANYON NATURAL GAS LEAK

Many of the more commonly used residential air cleaners will not effectively remove the odorous mercaptans and other sulfur-containing components of the Aliso Canyon natural gas leak from the air. However, several companies sell specialized models that should effectively reduce indoor levels of those and other chemicals emitted during gas leaks.

Portable Air Cleaners

The most effective air cleaners are likely the portable air cleaners with deep beds (large quantities) of activated charcoal (sorbent) combined with potassium permanganate or similar substances that are able to remove most of the mercaptans/sulfur compounds. Such models are usually relatively expensive and specialized.

One advantage of portable units is that they can be moved to areas where residents spend most of their time, such as the main living area during the day, and a bedroom at night. A portable air cleaner must be sized properly for the volume of air to be cleaned; typically a two-story home will require at least one unit on each floor. Portable units generally use less energy than an in-duct device installed in the central heating and air system. When two or more portable units are needed, however, there may be little difference in the total energy needed to clean the air compared to a central system. The sorbent beds (and most particle filters) will need to be replaced periodically, following manufacturer's instructions. They may need more frequent replacement than recommended if they are used in a heavily polluted area.

In-Duct Air Cleaning Devices

Some in-duct devices utilizing an ultraviolet (UV) bulb may also be effective at removing some of the offensive chemicals. However, some UV bulbs emit ozone, which is not recommended in areas occupied by people due to its harmful health impacts. UV bulbs that emit light at the 254 nanometer wavelength and block the shorter wavelengths should not produce ozone. In-duct air cleaning devices typically use more energy than portables because in-duct devices can only remove pollutants when the central system is on, and central systems utilize large, powerful motors to move the air throughout the ducts and the house.

Other Technologies

Other technologies may also be effective at removing the odorous chemicals. However, in a recent ARB-funded study conducted by scientists at Lawrence Berkeley National Laboratory, some air cleaners using photocatalytic oxidation were found to emit a larger quantity of chemicals than they removed, and some of those chemicals are potentially harmful to health. Other types of air cleaners, including some with activated charcoal, can emit chemicals and /or produce odors with use. Thus, air cleaners should be selected carefully (see below) and always maintained as recommended.

General Information on Indoor Air Cleaning Devices

General information regarding types of air cleaners and their performance is provided at http://www.arb.ca.gov/research/indoor/aircleaners/consumers.htm. The document entitled

"Air Cleaning Devices for the Home: Frequently Asked Questions," at http://www.arb.ca.gov/research/indoor/acdsumm.pdf may be especially useful.

California Air Resources Board (ARB) Certification

State regulation requires all air cleaners sold or distributed in California to be certified as not exceeding 50 parts per billion of ozone when tested using a specified test method. The list of air cleaner models that have been certified by ARB is available at http://www.arb.ca.gov/research/indoor/aircleaners/certified.htm. Note that this certification only covers ozone emissions and electrical safety; it does not include performance testing for removal of particles or chemicals from the airstream. Questions regarding California's air cleaner certification may be directed to ARB staff at aircleaners@arb.ca.gov.

SoCalGas Air Cleaners

ARB is reviewing the air cleaners offered by Southern California Gas (SoCalGas) to assess whether those air cleaners are likely to help reduce the levels of the chemicals of concern in homes affected by the gas leak. To date, ARB has reviewed the following air cleaner models and, based on the available information, agrees that they should help reduce indoor concentrations of the odorous chemicals.

IQAir GC-Multigas (portable)
Austin Air Healthmate Plus (HM450) and Healthmate Jr. Plus (HM250) (portables)
Air Scrubber Plus A1013C (inserts into central system ducting)

Other brands and models are under review, and may be added to this list in the future.

To request air filtration devices or file a claim from SoCalGas, please contact SoCalGas at their Aliso Canyon hotline at 818-435-7707 or email them at AlisoCanyon@SoCalGas.com.